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ABSTRACT

Recent research by Herman, Polivy, and their colleagues has been concerned with the determinants of self-control and disinhibition in dieters. The present paper summarizes a number of studies in which the reactions of dieters and nondieters to a variety of disinhibitory factors (preloading, emotional arousal, intoxication) were investigated. The effect of an observer on eating was found to be normalizing rather than inhibiting. Implications of the present research included suggestions that: (1) the dieter/nondieter distinction may be preferable to the obese/normal distinction in predicting eating; and (2) the external/internal control distinction in eating research be supplemented by a consideration of self-control. The paper concludes with a discussion of future directions in therapeutically-oriented eating research. (Author)

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Factors Influencing the Elimination of Dietary Restraint

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Factors Influencing the Elimination

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Much of the research currently being done on human eating behavior has gravitated toward the distinction between obese and normal weight eaters. Many investigators--on today's panel and elsewhere--have provided a wealth of data documenting the fact that obese and normal individuals differ in the way they eat, and the reasons for which they eat, as well as in the quantity of food consumed. This work continues today, and we are still debating over the extent to which the obese are "external" and what exactly externality is.

The work which we would like to present today falls within the overall tradition alluded to above, but it comes at it from a rather oblique angle, and a case can be made that it passes by the central issues altogether. At the very least, when we started, we thought we were addressing some of the critical questions related to the obese/normal distinction. We no longer abide by that distinction in our work, and I'll leave it to you to decide whether that's because our work is irrelevant to obesity research, or whether the obese/normal distinction is in some respects inadequate.

The original impetus for our research came from an enthusiastic reading -- some would say "misreading" -- of Nisbett's relative deprivation theory of obesity. Nisbett, you'll recall, argued that according to some physiological criteria, the obese were really underweight, and that the reason they behaved in their somewhat perverse manner was that in some sense they were starving. An external orientation to food cues,

for instance, was seen as the result of relative deprivation, and it was argued that starving people were external, just like the obese.

Whatever the merits of Nisbett's theory -- and, fortunately, he is not here today to repudiate it -- it at least had the advantage of suggesting some interesting hypotheses. At Northwestern, it occurred to us that if Nisbett were correct, then anyone whose weight is suppressed, for whatever reason, ought to behave as if he were obese. We deduced that normal weight dieters, whom we called restrained eaters, ought to show a more external orientation than other normal weight individuals who don't diet.

The particular test we chose to demonstrate this effect was response to preloading. Plenty of evidence had been collected -- much of it by people on this panel -- demonstrating that whereas normals compensate for preloading, eating less after a large preload, the obese seemed virtually oblivious to preload size in regulating their short-term intake. Actually, this differential response to preloading does not indicate externality so much as lack of internality, but, in effect, these were thought to be opposite sides of the same coin. (I'll leave it to Judy Rodin to clarify the relationship between externality and internality later in this symposium.)

In any case, on the typical sort of pretext we social psychologists have imported into the domain of eating research, we induced restrained and unrestrained normal weight subjects to preload themselves with 0, 1, or 2 milkshakes. Shortly thereafter, using the by now familiar taste-rating ploy, we observed their consumption of ice cream.

Our expectation was that for unrestrained eaters, ice cream consumption would vary inversely with preload size; for the restrained eaters, we did not expect such clear compensation. The results showed quite clearly that there was indeed an interaction between preload size and restraint. Our nondieting normals, as expected, compensated pretty well (as these things go) for the preload; our normal weight dieters, however, far from compensating for the preload, actually ate more following the larger preload. Our nondieters, then, showed the "normal" response, but our dieters resembled neither normals nor the obese. They were clearly not oblivious to the preload, but acted in a way that suggested to us that they were restrained eaters in a more dynamic sense than we had originally thought. We started with the premise that normal weight dieters were keeping their weight down below what it might otherwise be; in addition, however, they acted as if dieting was not simply a matter of resisting the external pull of attractive food cues, but also an active inhibitory state, in which they were resisting an internal push. This internal push, if allowed expression (and especially if given additional force by the Siren's call of savory external food cues) produced the sort of eating binge with which you are all familiar, and which has been documented extensively in the columns of Ann Landers and various other investigators. All this speculation, of course, was at the time entirely ad hoc, and our studies at Northwestern and Loyola have been aimed at substantiating and refining our understanding of the processes underlying consummatory inhibition and disinhibition.

First, as to substantiation, we have replicated the initial

effect a number of times. Our initial interpretation, of course, was that our dieters, being forced to consume a large preload, considered their diet to have been effectively demolished for the day, with the result that they adopted an attitude of abandon -- what we call the "What the hell. . ." approach to calories -- and ate accordingly. In one replication, we demonstrated that the disinhibition effect was in fact largely attitudinal, or at least cognitive; when we separated the true caloric value of the preload from its perceived value -- by misinforming half the subjects -- it turned out to be the case that perceived calories, not actual calories, controlled the disinhibition of restraint in our dieters. They overate only after they thought they'd blown their diets, whether they really had or not. In another replication, we used obese as well as normal weight dieters and nondieters -- it's not easy to find an obese nondieter, but there are a few around -- and found that the disinhibitory effect applied to obese and normal dieters alike. At the same time, the large preload inhibited consumption for both obese and normal nondieters. The statistical upshot of this scudy was that dieting predicts response to preloading, and the obese/normal variable doesn't. We've been led to wonder, in fact, whether other studies of obese/normal differences would have had somewhat different results had nondieting obese subjects been more equally represented in the overall obese sample. But that's another story, probably best ignored until the cocktail hour.

In our view, then, the issue became not so much a matter of internal versus external control of eating as of self-control. What

factors affected an individual's ability to maintain her diet despite the clamor of gastric and hypothalamic hunger signals pushing from the inside and despite the spectacular display of food cues beckoning from the outside? How does one resist, and under what circumstances does resistance collapse?

Our first deliberate attempt to observe the collapse of dietary restraint in a situation other than high caloric preloading involved alcohol. If the dieter's response to preloading -- what appeared to us to be a true disinhibition effect -- were really disinhibition and not some other mundane or mysterious process, then surely we could expect that alcohol would produce the same effect as a high calorie preload: restrained eaters should eat more following alcohol than following administration of a placebo solution. Alcohol had the additional advantage that we could expect it to produce a slight inhibition of eating in unrestrained eaters, who might be expected to compensate for the fairly high caloric content of alconol. Ultimately, in fact, we did get results conforming pretty well to these expectations; but not before running three or four studies over a period of two years, and learning more than we originally wanted to know about alcohol in the process. The problem, it turned out, was that alcohol per se just isn't a disinhibitor, at least not in any simple sense. If the subject is given alcohol, and told very explicitly that it is alcohol, and he's clearly suppressing the behavior you've set out to measure, than you'll get a disinhibition effect. Otherwise, you're just as likely -- in fact, more than just as likely -- to get just the opposite sort of effect. In the absence of a cognitive label to the effect that the beverage really contains alcohol, alcohol seems to act merely as a sedative; and a sedative, in nature's

seemingly deliberate attempt to confound us, has precisely the opposite effect of a disinhibitor on eating. A sedated dieter is more likely to adhere to his or her diet; sedation for the nondieter, however, produces (or at least permits) increased consumption.

When we set out to manipulate anxiety directly, our results fit in fairly coherently with the preceding formulation. Anxious dieters ate somewhat more than calm dieters. Our nondieters ate considerably less when anxious than when calm.

In the welter of significant interactions outlined above, a number of more or less hazy conclusions can be detected. First, alcohol researchers rush in where wise men fear to tread: the only reason we used alcohol was that we knew it to be the classic disinhibitor; our certainty about alcohol's effects, however, appears to be inversely related to the amount of research conducted. Secondly, we feel that we were successful in isolating and divergently validating the precarious cognitive control system of the dieter. Moment-to-moment adherence to a diet, resistance to internal and external pressures, is a demanding undertaking, and anything that distracts the dieter from vigilant concentration on that task -- be it the experience of intoxication, the more pressing concerns of anxiety or tension, or simply the temporary loss of purpose following forced preloading -- any or all of these will breach the fragile barrier of dietary resolve.

With the exception of our initial studies on alcohol, our research program has turned out to be an interlocking series of studies documenting the fragility of the dieter's resolve, and demonstrating

the variety and potency of the circumstances in which dieting breaks down. Even the demonstration that unlabelled alcohol acts as a sedative and in some sense prevents the collapse of restraint was unintentional. Our work on dieting is in this respect much like most current research on the factors influencing smoking; for both of these problem behavior areas, most of the research ends up showing us how to exacerbate the problem. It is thus with some relief that we present the results of our most recent study, in which our dieters behaved in what was a surprisingly self-controlled fashion.

The factor we added to our eating situation this time was intended to achieve one purpose -- to heighten the dieter's self-consciousness and thus lessen the probability of a disinhibition of restraint. The most straightforward technique we could come up with to create such self-consciousness on the part of the dieter was simply keeping the experimenter in the room, observing the subject but not eating anything herself. We felt that being observed would simply induce more self-awareness in our subjects; and that for the dieters, at least, self-awareness was the first prerequisite for self-control. Ultimately, of course, we would like to generate heightened self-awareness during eating without the costly crutch of an external observer; but our crude manipulation was at least a start.

The experiment worked as follows: subjects were, as usual, told that they were in a taste experiment, and that they would eventually taste and rate a variety of nuts. Initially, however, they were differentially preloaded with 5 or 15 ounces of Nutrament, on the typical sort of pretext. Before proceeding to "taste" the nuts, however, sub-

jects were instructed to comfortably fill themselves up with more Nutrament, if they were still at all hungry. The amount of additional Nutrament consumed beyond the preload constituted the first dependent measure of interest. And, as indicated above, for half the subjects the experimenter remained with the subjects; for the other half, the experimenter left the room while the subject ate, as is the custom in such studies. Our expectation was that the unrestrained eaters would be unaffected by the presence of the observer, eating in inverse proportion to preload size whether they were observed or not. And that's almost exactly what happened. There was a very strong main effect for preload size, and no main effect or interactions involving observation.

For the restrained subjects, our expectations were more complex. In the absence of the observer, we expected them to eat more following the larger preload. With the experimenter present, we expected uniformly low consumption following either preload. Our actual findings were somewhat different. With the observer absent, the dieters tended to eat more following the larger preload, as expected, though the effect was weak. When we added the observer, however, the dieters behaved exactly like nondieters, compensating strongly for the preload. Statistically, the result was a significant interaction; conceptually, the result was that dieters did not simply suppress eating in the presence of an observer. They <u>did</u> suppress their consumption following the 15-ounce preload; but following the 5-ounce preload, they actually ate <u>more</u> that the comparable group of unobserved dieters. The presence of the observer, then, did not so much inhibit eating as make the dieter's eating more

sensible, better co-ordinated to preload size, even if it meant eating more in some circumstances. If we knew less about our dieters, we might almost be tempted to describe them as internal, attending to physiological hunger cues. Lest we - or you - be tempted to draw such a hasty conclusion, though, it should be noted that during the next phase of the experiment, in which subjects taste-rated a variety of nuts without any observer present, our dieters reverted as a group to their more accustomed and perverse eating habits. The restrained eaters ate a great deal more than did the unrestrained eaters in this phase; and more interestingly, for the restrained eaters there was a strong positive correlation between amount of nuts eaten and total consumption of Nutrament (including the forced preload). For unrestrained eaters, the correlation was weak and negative. In other words, the apparently sensible eating behavior of the observed dieter vanished along with the observer.

What we must do, it seems, is somehow internalize the observer. For the dieter, the problem appears to be largely one of solitary consumption. And the solution, we feel, must involve training the sort of self-consciously sensible eating that just doesn't seem to come naturally to the problem eater. Though the dieter may not really attend to internal hunger cues, maybe he or she can be induced to act as if those cues were controlling eating. Acting normally may be tantamount to normality, at least where eating behavior is concerned.